## Technology: Microelectronics

### Far infrared wavelengths

Cornell University and the California Institute of Technology (Caltech) have signed an agreement committing the two institutions to collaborate on the planning for a 25meter infrared telescope high in the Atacama Desert of northern Chile. The universities will focus on the first phase of telescope development, says Riccardo Giovanelli, professor of astronomy at Cornell and project director. During the $2m study phase, researchers will outline the technical and financial resources required to construct the new telescope. Fred Young, an active Cornell alumnus and retired businessman from Racine, Wisc, will fund most of Cornell's share of the study. The estimated total cost of the telescope will be $60m and is expected see " first light" in 2012. The Atacama site, about 1,000 miles north of Santiago, is more than 5,000 meters (16,500 feet) above sea level.The Atacama telescope will be sensitive to light with far-infrared wavelengths longer than 200 microns, or 0.2mm which are too long to be perceived by the human eye, but are shorter than the waves that transmit radio and television signals.

### RFMD wins Taiwan's PA market

RF Micro Devices Inc has been recognised as Taiwan's leading provider of power amplifiers (PAs) for wireless handset by Market Intelligence Center. Its report "*The Taiwanese Mobile Phone Industry, 2003 and Beyond*" estimated that RFMD's market share in Taiwan grew from 23.1% in the 4Q of 2002 to 73.2 % in the 4Q of 2003, an increase of approximately 216%. In the year-over-year comparison, MIC estimated that RFMD increased its share of the Taiwanese PA market from 17.6% in calendar 2002 to 64.3 % in calendar 2003.

## Spectrum Control takes Salisbury Engineering

Spectrum Control Inc, electronic control products and systems designer and manufacturer, has acquired all the outstanding common stock of Salisbury Engineering Inc.

SEI is a privately-held company in Delmar, Delaware, which designs and manufactures a full line of RF and microwave components and systems used in military and aerospace applications.

Annual sales for the company were approximately $4m in the calendar year 2003. SEI currently employs some 40 people.

Dick Southworth, Spectrum Control's president and CEO, says, "With this acquisition, we are significantly expanding our microwave technology and product offerings. SEI's current products include microwave synthesizers, multiple channel filter banks and preselectors, and GPS low noise amplifiers. In addition, SEI's microwave component offerings (miniature chip; lumped element; band reject and cavity filters, and waveguides) are a natural complement to our existing frequency control product group. The expansion of our product offerings, particularly with more complex advanced systems, is a major element of our current strategic focus and long-term growth plan."

## Anadigics new HELP modules

Anadigics Inc, wireless and broadband solutions supplier, has introduced a new family of high-efficiency-at-low-power CDMA linear power amplifier modules, HELP. The new AWT6137 AMPS/CDMA and AWT6138 PCS/CDMA PA modules deliver leading DC power consumption along with footprint compatibility with the previous product generation.

Dr Bami Bastani, president & CEO of Anadigics, says "Our new family of HELP PAs provide us with a unique technology platform that positions us for continued success in CDMA, as well as the wideband CDMA market."

The modules are claimed to reduce handset power consumption by 50%, delivering an efficiency of 20% at +16 dBm, compared with 8% to 10% for currently available competitive products.

The devices' design uses mode switching to take advantage of high efficiency operation over a wide range of output powers. At +28 dBm, the AWT6137 and AWT6138 provide an efficiency of 39%.

Both of the new HELP PAs provide low leakage currents in shutdown mode of less than 1mA, and the AWT6137 offers an idle current of 15mA at +28 dBm. The AWT6137 and AWT6138 support CDMA 1XRTT and 1xEV-DO operation.

## IR transceiver enables remote control

Agilent Technologies Inc's IR transceiver allows mobile phones to function as universal IR remote control devices for TVs, VCRs, DVDs, and other home appliances.The compact, low-cost HSDL-3005 transceiver offers a remote control distance of up to 7m, or some 23ft, with an Infrared Data Association link distance of up to 50cm.

It achieves its low cost and compact size through a single, high-power 883nm wavelength LED for IrDA and remote control operation, rather than providing separate emitters for IrDA and for remote control.

The transceiver is available in two versions - front and side view.The front view package measures 8x2.5x3mm, the side-view is 7.50x2.80 x3.35mm.

The HSDL-3005 has easy software programming.The complementary HSDL-8300 application software is a remote control programme, with a predefined remote control database and a self-teach/learn mode.

It incorporates profiles for TV, DVD, VCR, air conditioning, CD, audio, LD/VCD (laser disk/video compact disk) and other appliances. Each profile can have up to 10 sets of device controls, thus 80 home appliance devices can be stored.

The HSDL-3005 transceiver is compliant with IrDA physical layer v1.4 low-power standards and operates at SIR data rates, from 9.6Kbps to 115.2Kbps.

A combination of low idle current of <100mA and shutdown current of 10nA extends battery life in mobile devices. The device provides LED stuck-high protection and is capable of operating with power sources ranging from 2.4V to 3.6V. In moderate volumes, the HSDL-3005 is priced at less than $1.50.